

**REMARKS**

Please reconsider the application in view of the following remarks. Applicants thank the Examiner for carefully considering this application. Furthermore, the Applicants thank the Examiner for withdrawing the finality of the previous rejection.

**Disposition of Claims**

Claims 5-11 are pending in this application. Claims 5, 8 and 11 are independent. The remaining claims depend, directly or indirectly, from claims 5 and 8.

**Rejection(s) under 35 U.S.C § 112**

Claims 5-10 stand rejected under 35 U.S.C. § 112 as being indefinite. This rejection is respectfully traversed.

The Examiner states that independent claims 5 and 8 are indefinite because the diamond table was not previously recited as *extending past the outer surface of the blade*. This limitation was not previously recited because claims 5-10 do not require that any portion of the diamond table extend past the outer surface of the blade. The only limitation regarding this aspect of the invention is that the relief groove extends back from the outer surface a distance of at least 40 percent of that portion of the thickness of the diamond table that *does not* extend past the outer surface of the blade. Proper antecedent basis is provided for this limitation, as claims 5 and 8 recite that the cutting element comprising a diamond table is mounted in a mounting pad formed *in the blade*. In other words, in the case where the diamond table does not extend longitudinally past the surface of the blade (i.e. E = 0), the relief groove will be at least 40 percent of the

diamond table thickness.

### **Rejection(s) under 35 U.S.C § 103**

Claims 5, 7, 8, 10 and 11 stand rejected under 35 U.S.C. § 103 as obvious over U.S. Patent No. 6,006,846, issued to Tibbitts et al. (“Tibbitts”) in view of U.S. Patent No. 4,787,466, issued to Tomlinson et al. (“Tomlinson”). This rejection is respectfully traversed.

A drill bit according to the embodiments of claims 5, 7, 8, 10, and 11 comprises a mounting pad having a relief groove (26 in Fig. 3) formed in the bit body under a position of a diamond table of a cutting element. Claims 5 and 8 further require that the relief groove extends back from an outer surface of the blade at least about 40 percent of that portion of a thickness of the diamond table that does not extend past the outer surface. The formation of such a groove at this location with respect to the diamond table advantageously provides stress relief between the diamond table and bit body, while obviating the need to dispose the diamond table so that it protrudes beyond the bit body.

As noted by the Examiner, Tibbitts fails to disclose or suggest a mounting pad including a relief groove that extends back from an outer surface of the blade at least about 40 percent of that portion of a thickness of the diamond table that does not extend past the outer surface. Tomlinson also fails to disclose or suggest such a groove. In contrast to the present invention, *Tomlinson deals only with the configuration of a cutter, or “pin”* and makes no reference to any type of mounting pad formed in a blade of a drill bit, as required by the instant claims. The abrasive compact portion of the Tomlinson pin lies wholly *within the side surface 16 of the elongate pin* (Col. 2, ll. 32-33) and the

groove formed in the Tomlinson pin is to “*prevent the abrasive compact coming into contact with the elongate pin 10*” (Col. 2, ll. 34-35). Furthermore, the depth of the groove formed in the Tomlinson pin “is greater than the width of the compact” (Col. 2, ll. 42-43). Accordingly, because Tomlinson fails to disclose or suggest the mounting pad and relief groove that Tibbitts lacks, withdrawal of this rejection is respectfully requested.

Claims 6 and 9 stand rejected under 35 U.S.C. § 103 as obvious over Tibbitts in view of Tomlinson, and further in view of U.S. Patent No. 6,220,117, issued to Butcher (“Butcher”). This rejection is respectfully traversed.

As previously stated, both Tibbitts and Tomlinson fail to disclose or suggest a relief groove in a mounting pad, as required by claims 5 and 8. Butcher also fails to disclose or suggest such a groove. Accordingly, claims 6 and 9, which depend from independent claims 5 and 8, are patentable over this combination of references for at least the same reasons stated above. Therefore, withdrawal of this rejection is respectfully requested.

**Conclusion**

Applicants believe this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 05516.084001).

Respectfully submitted,

Date: 10/17/03



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